

FORM PTO-1390
(REV 11-98)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER
P/61210-PCTTRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)

09/720667

INTERNATIONAL APPLICATION NO.
PCT/GB99/02129INTERNATIONAL FILING DATE
07/02/1999PRIORITY DATE CLAIMED
7/3/1998

TITLE OF INVENTION TELECOMMUNICATIONS NETWORK

APPLICANT(S) FOR DO/EO/US Dennis PEARSON, Thomas Joseph SNAPE

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371 (f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 37 (b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c)(2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371 (c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
 ☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information: Receipt Acknowledgement Postcard; Form PCT/IB/301; 304; 308; 332;

Form PCT/IPEA/408; 416; 409; WO 00/02399

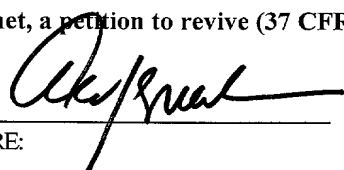
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December 28, 2000

(date)

Alan Israel

Reg. No. 27,564

U.S. APPLICATION NO. (if known, see 37 CFR 1.52) 09/720667		INTERNATIONAL APPLICATION NO. PCT/GB99/02129		ATTORNEY'S DOCKET NUMBER P/61210-PCT	
17. <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492 (a)(1) - (5)) : Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO. \$1,000.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$860.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$760.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$690.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =				CALCULATIONS PTO USE ONLY	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492 (e)).				\$0.00	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	13 - 20 =	0	X \$18.00	\$0.00	
Independent claims	2 - 3 =	0	X \$80.00	\$0.00	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$270.00	\$0.00	
TOTAL OF ABOVE CALCULATIONS =				\$0.00	
Reduction of 1/2 for filing by small entity, if applicable, A Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28).				\$860.00	
SUBTOTAL =				\$860.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492 (f)).				\$0.00	
TOTAL NATIONAL FEE =				\$860.00	
Fee for recording the enclosed assignment (37 CFR 1.21 (h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +				\$0.00	
TOTAL FEES ENCLOSED =				\$860.00	
				Amount to be: refunded	\$
				charged	\$
a. <input checked="" type="checkbox"/> A check in the amount of \$ <u>860.00</u> to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. <u>11-1145</u> in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>11-1145</u> . A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: Alan Israel, Esq. KIRSCHSTEIN, OTTINGER, ISRAEL & SCHIFFMILLER, P.C. 489 Fifth Avenue New York, New York 10017			 SIGNATURE: Alan Israel NAME 27.564 REGISTRATION NUMBER		

09/720667
526 Rec'd PCT/PTO 28 DEC 2000

Docket No.: P/61210, USP/GPTU51/jog

PATENTS
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(date) Alan Israel
Reg. No. 27,564

International Application No.: PCT/GB99/02129
International Filing Date : July 2, 1999
In re: Application of : Dennis PEARSON, et al.
Deposited : December 28, 2000
For : TELECOMMUNICATIONS NETWORK

New York, New York
December 28, 2000

PRELIMINARY AMENDMENT

BOX: PCT
Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Prior to calculation of the filing fee and before examination, kindly amend the above
captioned application as follows:

IN THE SPECIFICATION:

Page 1, between the title and the first line of text, insert the following heading:

-- BACKGROUND OF THE INVENTION --;

line 18, change "realised" to -- realized --.

Page 2, at line 2, insert the following heading:

-- SUMMARY OF THE INVENTION --.

Page 3, at line 3, insert the following heading:

-- BRIEF DESCRIPTION OF THE DRAWINGS --;

line 10, after “network;”, insert -- and --;

line 13, insert the following heading:

--DETAILED DESCRIPTION OF THE
PREFERRED EMBODIMENTS --;

line 22, change “standardised” to -- standardized --.

Page 4, line 15, change “standardised” to -- standardized --.

Page 5, line 21, change “recognised” to -- recognized --.

Page 7, line 11, change “dependant” to -- dependent --;

line 22 (last line of the page), change “an” to -- a --.

IN THE CLAIMS:

Page 11, change the subtitle “CLAIMS” to -- WE CLAIM --.

Please amend the claims as follows:

Claim 1, line 3, change “characterised in that” to -- in which --.

Claim 6, line 1, change “any one of the above claims” to -- Claim 1 --.

Claim 7, line 1, change “any one of Claims 2 to 6” to -- Claim 2 --.

Claim 10, line 1, change “any one of Claims 7 to 9” to -- Claim 7 --.

Claim 11, line 1, change “any of Claims 7 to 10” to -- Claim 7 --.

Claim 13, line 3, change “characterised in that” to -- in which --.

IN THE ABSTRACT:

Delete the "Abstract" on the PCT cover sheet and replace it with the "Abstract of the Disclosure" set forth on a separate sheet attached hereto.

REMARKS

Headings have been added to the specification; an abstract has been provided on a separate sheet; the specification was amended; and the claims have been amended to conform to U.S. practice.

Wherefore, an early action on the merits is earnestly solicited.

Respectfully submitted,

KIRSCHSTEIN, OTTINGER, ISRAEL & SCHIFFMILLER, P.C.

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ABSTRACT OF THE DISCLOSURE

A telecommunications system comprising an intelligent network (IN) for providing IN and non-IN services and a service creation environment function (SCEF) in which the SCEF is arranged to provide service logic and service data templates for supporting both IN and non-IN services. The service logic provided by the SCEF may either be distributed between the service control function (SCF), the service switching function (SSF) and the call control function (CCF) or located in the SCF with the SSF arranged to pass protocol input messages to the SCF and signaling messages from the SCF to the CCF. --

TELECOMMUNICATIONS NETWORK

ART 34 AMDT

The current invention relates to Telecommunications Networks and in particular to the provision of Intelligent Network and non-Intelligent Network Services.

ITU Recommendations (Q.1221; Q.1222; Q.1223; Q.1224; Q.1225; Q.1228) define a number of Intelligent Network functions and functional relationships. Current intelligent network (IN) architecture uses the service switching point (SSP) to converge IN and non-IN call and connection control. For exchange to exchange signalling, the call control uses ISDN user part (ISUP) and, in the UK, also national user part (NUP) as defined in standards BTNR 167 and ITU-T Q.761-764. From the view point of the SSP, the IN standards define: management of the interaction of IN and non-IN services in the SSP; a service creation environment for IN services; a defined intelligent network application protocol (INAP) for signalling between the service control function (SCF) and the service switching function (SSF); an abstract internal entity definition of SSF and call control function (CCF) functionality within the SSP; and an originating and terminating state machine defining the relationship between call and connection control and IN service logic control realised through the use of the INAP interface defined between the SCF and the SSP. However the exact relationship between SSF and CCF is not defined in the standards.

WO-A-97 36430 assigned to British Telecommunications plc, describes a conventional intelligent network in which IN services are created in a service creation environment whereas non-IN services are not created in the service creation environment.

1a

In intelligent networks service logic and data templates for supporting new services are created in the service creation environment function (SCEF). Current IN architecture definitions provide no single unified process in the SCEF for the definition of IN and

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non-IN service logic and service data inter-acting in a coherent manner.

By using the present invention it is possible to provide a more efficient and precise method of defining and deploying IN and non-IN services.

The present invention provides a telecommunications system comprising an intelligent network (IN) for providing IN and non-IN services and comprising a service creation environment function (SCEF), characterised in that the SCEF is arranged to provide service logic for the IN for supporting both IN and non-IN services.

In a preferred embodiment of the invention the telecommunications system comprises a service control function (SCF), a service switching function (SSF) and a call control function (CCF) in which the IN and non-IN service logic is distributed between the SCF, SSF and CCF.

In a further preferred embodiment of the invention the telecommunications system comprises a service control function (SCF) and a service switching point (SSP), the SSP comprising a call control function (CCF) and a service switching function (SSF) in which the IN and non-IN service logic is located in the SCF and in which the SSP is arranged to pass some or all protocol input messages received by the SSP to the SCF and some or all signalling messages originating in the SCF to the CCF for output.

The present invention also provides a telecommunications system comprising an intelligent network (IN) for providing IN and non-IN services and comprising a service

creation environment function (SCEF) characterised in that the SCEF is arranged to provide data structures for the IN for supporting both IN and non-IN services.

Embodiments of the invention will now be described by way of example with reference to the figures in which:-

Figure 1 shows in diagrammatic form the elements of a telecommunications system including an intelligent network according to the prior art;

Figure 2 shows in block diagram form a typical network of the prior art implementing an intelligent network;

Figure 3 shows in diagrammatic form an arrangement pertaining to a telecommunications system including an intelligent network according to the present invention.

In a conventional network as shown in Figure 1 the SCEF creates service logic for deployment by the service management function (SMF). Figure 1 depicts the Intelligent Network functions and relationships as defined in the current standards. Note that there is no direct relationship shown between:

- the SCF and CCF (although there is one through the SSF);
- the SMF and CCF (although there is one through the SSF); or
- the SDF and the SSF or CCF.

Intelligent Network Capability Set-2 (IN CS-2) is the second standardised stage of the Intelligent Network (IN) as an architectural concept for the creation and provision of

services, including telecommunication services, service management services and service creation services. Call/service processing for IN CS-2 builds upon the call processing infrastructure of existing digital exchanges. It does so by using a generic model of existing call control functionality to process basic two-party calls, then adding service switching functionality to invoke and manage IN service logic. Once invoked, IN service logic is executed under the control of the service control function (SCF), in conjunction with the service data function (SDF). With this distributed approach to call/service processing, the existing call control function retains ultimate responsibility for the integrity of calls, as well as for the control of call processing resources.

The current definition of IN CS-2 imposes a number of call/service processing conditions as described in the following paragraphs:

- (a) Call control and service switching functionality are tightly coupled, and the relationship between SSF and CCF is not standardised in IN CS-2: therefore no open interface exists between them.
- (b) A call is either between two or more end users that are external to the network (and addressable via a directory number or combination of directory number and bearer capability), or between one or more end users and the network itself.
- (c) A call may be initiated by an end user, or by a SCF within the network on behalf of an end user. To supplement a call, IN service logic may be

invoked either by an end user served by an IN exchange, or by the network on behalf of an end user.

- 5
- (d) A call may span multiple exchanges. As such, each exchange only controls the portion of the call in that exchange - call processing is functionally separated between exchanges. IN service logic invoked on SSPs in such an inter-exchange call is managed independently by each SSP.
- 10
- (e) Existing exchanges can be viewed as having two functionally separate sets of call processing logic that coordinate call processing activities to create and maintain a basic two-party call. This functional separation is provided between (i) the originating portion of the call and (ii) the terminating portion of the call. This functional separation should be maintained in an IN exchange to allow IN service logic invoked on the originating portion of the call (i.e. on behalf of the calling party) to be managed independently of IN service logic invoked on the terminating portion of the call (i.e. on behalf of the called party).
- 15
- (f) It is desirable to allow multiple IN-supported service logic instances to be simultaneously active for a given end user. It is also recognised that non-IN service logic will continue to exist in the network. As such, IN CS-2 mechanisms for providing service feature logic instances should:
- 20
- determine which service logic to invoke for a given service

request. This mechanism should select the appropriate IN service logic or non-IN service logic and block the invocation of any other service logic for that particular service request;

- limit simultaneously active IN and non-IN service logic instances;
- ensure that simultaneously active IN service logic instances adhere to the single-ended, single point of control restriction on IN CS-2 service processing, i.e. an SSF never has to inter-act with more than one SCF at any one time.

(g) The distributed approach and added complexity of call/service processing for IN CS-2 requires mechanisms for fault detection and recovery, allowing graceful termination of calls and appropriate treatment for end users.

A typical conventional network implementation of the Intelligent Network (IN) concept is shown in Figure 2, which shows the IN elements interfacing with a Front Office System. The Call Control Function is provided by a number of co-operating CCFs which provide basic call and supplementary service control. This is provided in the originating and terminating local exchanges (Digital Local Exchange (DLE)) and in trunk exchanges (Digital Main Switching Unit (DMSU)). The IN provides limited control of the CCF via the SCF and the SSF using a standard signalling interface such as CS-2. This allows for single-point control over the routing of the connection between the originating and terminating subscribers for services such as Freephone, where translation of the destination number is performed at the SCP. Note that all IN services can be triggered

at any of the local or trunk exchanges in the example shown in the figure.

In a conventional telecommunications network the call handling is provided in the CCF.

When a user makes access to the telecommunications network, e.g. by initiating a

5 telephone call, a call control chain is established from the caller via one or more CCFs

to the destination. Various stages of the call control chain are set-up according to the

standards for NUP, ISUP or access protocol ITU-T Q.931. These protocols define the

messages and protocol information elements. Access protocol input messages are

10 derived from the ISUP and Q.931 call control chain. Protocol information elements are

defined in ISUP or Q.931 (e.g. calling line identity) or sent from the SCF as appropriate,

dependant on the service requested. The call control chain from the CCF to other

exchanges is therefore driven by messages defined by the appropriate network standard

(NUP/ISUP) or access protocol (ITU-T Q.931).

15 According to Q.1221 the SCEF allows an intelligent network service to be defined,

developed, tested and input to the SMF. To do this the SCEF outputs service logic and

service data templates. The service management function, SMF provides service

operation control, service provision control, service deployment control, service

monitoring and maintenance. The SCF and SSF are responsible for the handling of

20 interactions between IN based SSF/CCF capabilities and non-IN features already

provided in the basic network.

Figure 3 shows the various interfaces between the elements of an telecommunications

system including an intelligent network according to the present invention.

In the prior art, interfaces 1 exist between CCF-SRF, SRF-SCF, SRF-SMF, SCF-SMF, SCF-SDF, SMF - SSF and SMF-SDF. In addition, in the prior art, the SCEF has means 2 for the deployment of management forms to the SMF, means 3 for the deployment of service logic and data templates to the SCF and means 4 for the deployment of service data templates to the SDF.

According to the embodiments of the invention described here, new interfaces 5 allow deployment of service logic and service data to the SSF and CCF. Further new interface 6 provide means for data population and management from the SMF to the CCF. Further new interfaces 7 provide direct access from the SSF and CCF to the SDF for service data. Finally the existing interfaces 8 between SCF-SSF and SSF-CCF are enhanced according to a preferred embodiment of the invention described below.

Two embodiments of the invention will now be described by way of example, however the invention is not limited to these embodiments which only represent illustrations of two amongst a multitude of possible arrangements that fall within the scope of the invention. In particular, the distribution of service logic and service data amongst the elements referred to above is not limited to those described in the embodiments. Elements from each embodiment may be combined to form further arrangements according the present invention. In both embodiments the SCEF produces service logic to control the call control chain between exchanges and any functional response to the protocol used to invoke services.

According to a first embodiment of the invention the SCEF is used to provide service logic, both IN and non-IN, distributed between the SCF and SSF/CCF. In order to achieve the above the SCEF is enhanced to allow service logic and associated data structures to be created and loaded into the CCF as well as the SCF and SSF for both IN and non-IN service control. In addition, the CCF is enhanced to allow it to be loaded with service logic and service data, e.g. from the SMF or man-machine interface (MMI), to interact with the SCF via the SSF using messages, operations and parameters defined using the SCEF, and to create a relationship between the CCF and the service data function (SDF). In this instance, the CCF will access the SDF directly for service data.

According to a second embodiment of the invention the SCEF is used to provide service logic, both IN and non-IN, residing in the SCF with only a minimal amount of service logic required in the SSF and CCF. The SSP is arranged to send all or some protocol input messages to the SCF and, in addition, all or some signalling messages originating in the SCF are sent out by the SSF/CCF. Basic control of internal resources is still done by the CCF. The signalling messages originated by the SCF include NUP, ISUP or Q.931 messages and parameters for onward transmission and are enveloped by the SSF with a CS-2 envelope. These functions are supported by the SCEF which is enhanced to allow the definition of messages, operations and parameters for transfer between the SCF and the CCF (relayed by the SSF) for control of both IN and non-IN services. In addition, the SSF is enhanced to allow the transparent passage of messages between the SCF and CCF for both call related and call unrelated activities and a relationship is established between the SSF, the CCF and the SCF. In this instance, the SSF acts as a relay between the SCF and CCF.

The present invention advantageously allows the service developer to specify the way in which IN and non-IN services interact and to load appropriate service logic into the CCF to allow all subscriber service profiles (part of the service data) to be held on the SCF or SDF or distributed as required so as to control the behaviour of the call control chain to provide IN and non-IN services. An example of this control would be to invoke functionality in distant telecommunications exchanges via communication using NUP or ISUP messages (e.g. invoking Ring-Back-When-Free in a second exchange when the desired called party is already using the telephone). The data elements (static and dynamic data which define telecommunications services established for the subscriber) have a relationship defined by the service creation process in the SCEF. The present invention allows the SMF to load the SCF, SSF and CCF with the appropriate service logic and service data to provide the IN non-IN services in a coherent manner and allow the SCF to send the ISUP or NUP protocol information element via the SSF/CCF to the distant exchange and invoke RBWF, if the subscriber has this service.

CLAIMS

1. A telecommunications system comprising an intelligent network (IN) for providing IN and non-IN services, and comprising a service creation environment function (SCEF), characterised in that the SCEF is arranged to provide service logic for the IN for supporting both IN and non-IN services.
2. The telecommunications system of Claim 1 comprising a service control function (SCF), a service switching function (SSF) and a call control function (CCF), in which the system includes means for distributing the IN and non-IN service between the SCF, SSF and CCF.
3. The telecommunications system of Claim 1 comprising a service control function (SCF), a service switching function (SSF) and a call control function (CCF), in which the SCEF is arranged to provide the IN and non-IN service logic in the SCF, the SSF and the CCF.
4. The telecommunications system of Claim 1 comprising a service control function (SCF) and a service switching point (SSP), the SSP comprising a call control function (CCF) and a service switching function (SSF), in which the SCEF is arranged to provide the IN and non-IN service logic in the SCF, and in which the SSP is arranged to pass some or all protocol input messages received by the SSP to the SCF and some or all signalling messages originating in the SCF to the CCF.

5. The telecommunications system of Claim 4 in which the SCF is arranged to perform some or all of the functions previously performed by the service switching function (SSF) and the call control function (CCF).
6. The telecommunications system of any one of the above claims in which the SCEF is also arranged to provide data structures for both IN and non-IN telecommunications services.
7. The telecommunications system of any one of Claims 2 to 6 in which the SCEF is also arranged to provide data structures in the CCF.
8. The telecommunications system of Claim 1 also comprising a call control function (CCF), in which the SCEF is also arranged to provide data structures in the CCF.
9. The telecommunications system of Claim 1 also comprising a call control function (CCF) arranged to allow loading of data structures in the CCF from the service management function (SMF).
10. The telecommunications system of any one of Claims 7 to 9 in which the data structures comprise data structures for both IN and non-IN telecommunications services.
- ~~11. The telecommunications system of any of Claims 7 to 10 also comprising a~~

11. The telecommunications system of any of Claims 7 to 10 also comprising a service data function (SDF), in which the CCF is arranged to access the SDF directly for service data.
12. The telecommunications system of Claim 4 in which the SCEF is arranged to support the definition of messages, operation and parameters for transfer between the SCF and the CCF.
13. A telecommunications system comprising an intelligent network (IN) for providing IN and non-IN services, and comprising a service creation environment function (SCEF), characterised in that the SCEF is arranged to provide data structures for the IN for supporting both IN and non-IN services.

Fig.1.

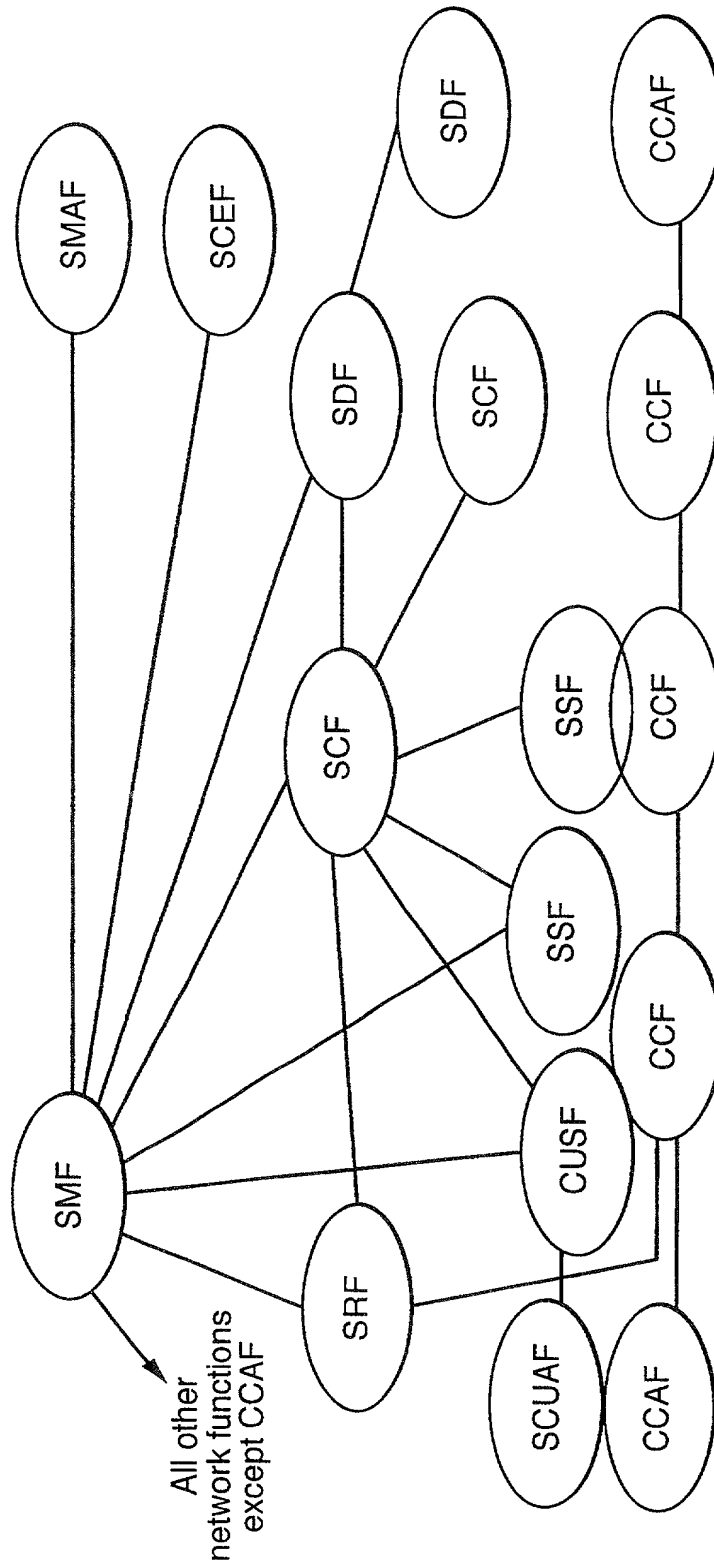


Fig.2.

2/3

DATA TEMPLATES

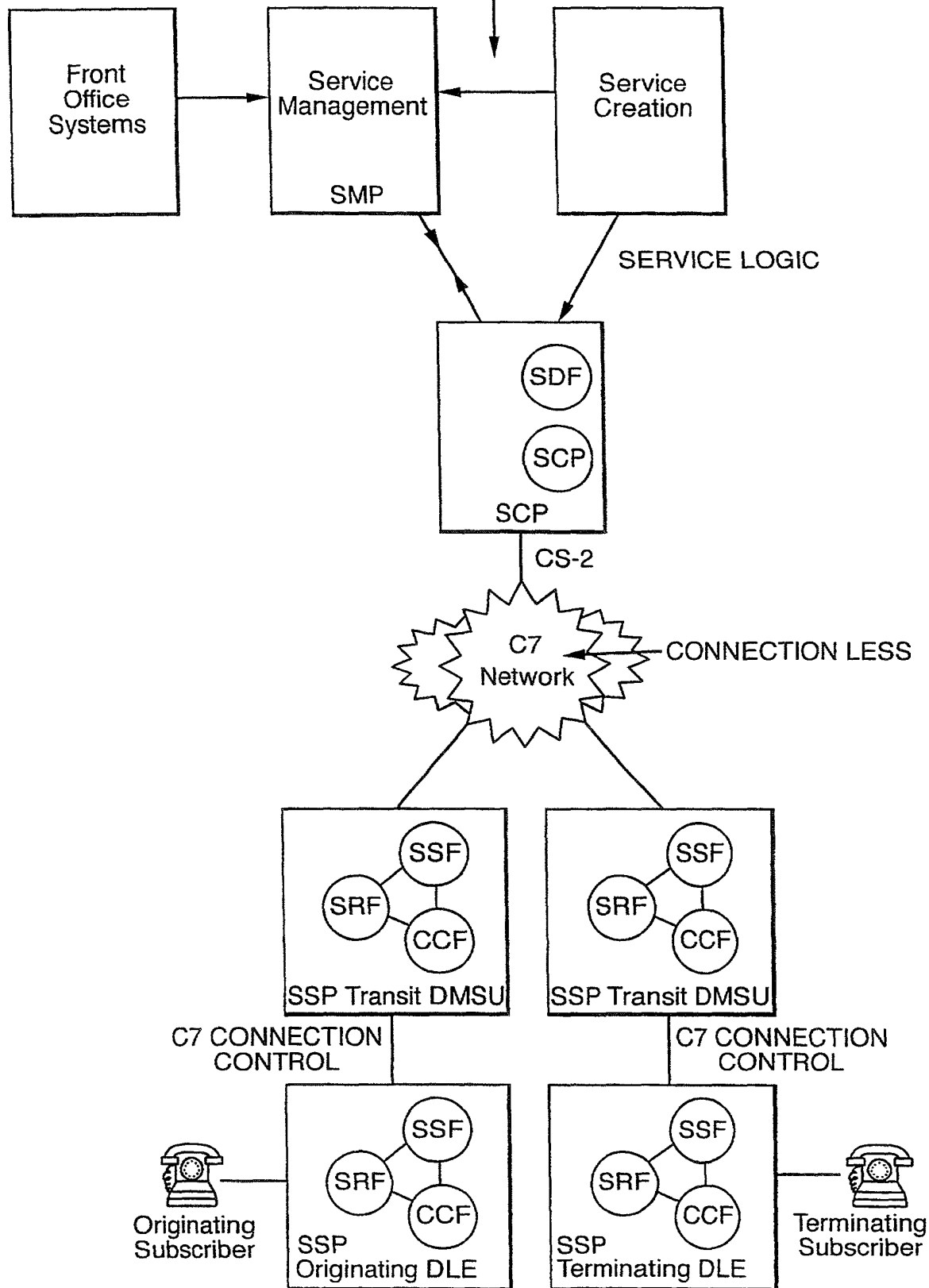
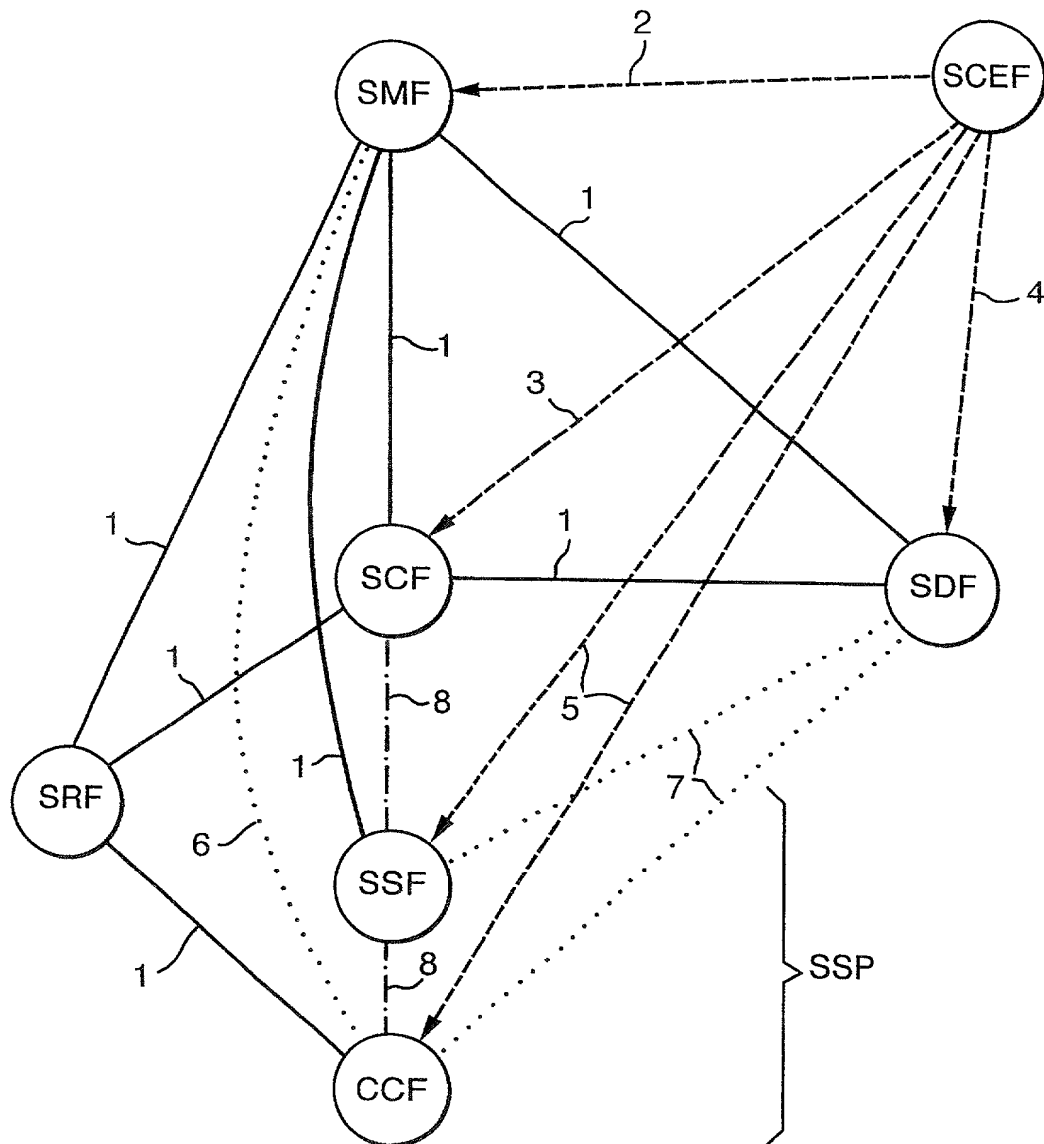


Fig.3.



Type a plus sign (+) inside this box → ☐

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION <input type="checkbox"/> Declaration Submitted with Initial Filing OR <input checked="" type="checkbox"/> Declaration Submitted after Initial Filing	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket Number P/61210/GPTU51
		First Named Inventor Dennis PEARSON
	COMPLETE IF KNOWN	
	Application Number 09/720,667	
	Filing Date DECEMBER 28, 2000	
	Group Art Unit 	
		Examiner Name

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

TELECOMMUNICATIONS NETWORK

the specification of which

☐ is attached hereto
OR

☒ was filed on (MM/DD/YYYY)

2nd July 1999

as United States Application Number or PCT International

Serial No. 09/720,667
Dec. 28, 2000

Application Number

PCT/GB99/02129

and was amended on (MM/DD/YYYY)

(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37 Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code §119(a)-(d) or §385(b) of any foreign application(s) for patent or inventor's certificate, or §385 (a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
9814418.1	GB	July 3rd 1998	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PCT/GB99/02129	PCT	07/02/1999	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority sheet attached hereto:

I hereby claim the benefit under Title 35, United States Code § 119(a) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority sheet attached hereto.

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DECLARATION

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I hereby claim the benefit under Title 35, United States Code §120 of any United States application(s), or §365(c) of any PCT International application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number	PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

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As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

☐ Firm Name Customer Number or label
☒ List attorney(s) and/or agent(s) name and registration number below:

Name	Registration Number	Name	Registration Number
David B. Kirschstein, Esq.	17,244		
Alan Israel, Esq.	27,564		
Martin W. Schiffmiller, Esq.	30,421		


☐ Additional attorney(s) and/or agent(s) named on a supplemental sheet attached hereto.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name	<u>Dennis</u>	Middle Initial		Family Name	<u>PEARSON</u>	Suffix e.g. Jr.	
Inventor's Signature						Date	<u>22/01/01</u>

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Applicant Authority							

☒ Additional inventors are being named on supplemental sheet(s) attached hereto

ADDITIONAL INVENTOR(S)
Supplemental Sheet

[illegible]